

CLAIMS

The embodiments of the invention in which an exclusive property or privilege is claimed are defined as follows:

1. An adapter for a remote device having a remote device rechargeable source
5 comprising:

a contactless power interface for receiving power from a contactless power supply;

a power regulator for supplying power to the remote device; and

a rechargeable power source for powering the adapter.
- 10 2. The adapter of claim 1 further comprising a transceiver for communicating with the contactless power supply.
3. The adapter of claim 2 further comprising a controller, the controller controlling the power regulator.
4. The adapter of claim 3 further comprising a communication link for
15 communicating with the remote device.
5. The adapter of claim 4 where the contactless power interface includes a variable impedance element, the variable impedance element having an impedance.
6. The adapter of claim 5 where the controller is coupled to the variable impedance element, and the controller capable of changing the impedance of the variable impedance
20 element.
7. The adapter of claim 6 where the variable impedance element is a variable inductor.

8. The adapter of claim 7 where the controller varies the impedance of the variable inductor in response to instructions from the contactless power supply.

9. The adapter of claim 8 where the adapter includes a secondary winding.

10. The adapter of claim 9 where the controller is coupled to a memory.

5 11. The adapter of claim 10 where the memory includes an identifier.

12. The adapter of claim 11 where the adapter can obtain power requirements from the remote device.

13. An adapter for connection to a remote device, the remote device having a remote device rechargeable power source, comprising:

10 a contactless power interface for receiving power from a contactless power supply;

a power regulator for supplying power to the remote device for charging the remote device rechargeable power source; and

a receiver for communicating with the contactless power supply.

15 14. The adapter of claim 13 further comprising a secondary winding.

15. The adapter of claim 14 further comprising a power supply.

16. The adapter of claim 15 further comprising a controller, the controller controlling the power regulator.

17. The adapter of claim 16 further comprising a communication link for
20 communicating with the remote device.

18. The adapter of claim 17 where the contactless power interface includes a variable impedance element.

19. The adapter of claim 18 where the controller is coupled to the variable impedance element, and the controller can change the impedance of the variable impedance element.

20. The adapter of claim 19 where the variable impedance element is a variable inductor.

5 21. The adapter of claim 20 where the controller varies the impedance of the variable inductor in response to instructions from the contactless power supply.

22. The adapter of claim 21 where the controller is coupled to a memory.

23. A method of operating an adapter for recharging a remote device rechargeable power source contained with a remote device with power from a contactless power supply
10 comprising the steps of:

obtaining charging information from the remote device;

providing the charging information to the contactless power supply; and

supplying power to the remote device.

24. The method of claim 23 further comprising the step of the contactless power
15 supply receiving power requirement information from the remote device.

25. The method of claim 24 where the adapter has a first transceiver for communicating with the contactless power supply further comprising the step of establishing a first communication link between the adapter and the contactless power supply.

26. The method of claim 25 where the adapter sends the power requirement
20 information from the remote device by way of the first communication link.

27. The method of claim 26 where the adapter has a second transceiver for communicating with the remote device further comprising the step of establishing a second communication link between the adapter and the remote device.

28. The method of claim 27 further comprising the step of the adapter sending the power requirement information to the contactless power supply by way of the second communication link.

29. The method of claim 28 where the adapter includes a contactless power interface,
5 and the contactless power interface has an adjustable element, further comprising the step of determining an optimal setting for the adjustable element.

30. The method of claim 29 where the adjustable element is a variable inductor, and the step of determining an optimal setting for the adjustable element comprises determining the optimal inductance setting for the variable inductor.

10 31. The method of claim 30 further comprising the step of determining whether the rechargeable power source is charged.

32. An adapter for supplying power to a remote device from a contactless power supply comprising:

a secondary having a first coil, a second coil and a third coil, each coil being
15 substantially orthogonal to the other coils and
a power regulator.

33. The adapter of claim 32 further comprising a first capacitor coupled with the first coil, a second capacitor coupled with the second capacitor and a third capacitor coupled with the third capacitor.

20 34. The adapter of claim 33 further comprising a rectifier coupled to the secondary for converting an AC signal induced in the secondary to DC.

35. The adapter of claim 34 where the rectifier is a half-wave rectifier.

36. The adapter of claim 34 where the rectifier is a full-wave rectifier.

37. The adapter of claim 34 where the rectifier consists of a first diode in series with the first coil, a second diode in series with the second coil and a third diode in series with the second coil.

38. The adapter of claim 37 where the first capacitor is in series with the first coil and the first diode, the second capacitor is in series with the second coil and the second diode, and the third capacitor is in series with the third coil and the third diode.

39. The adapter of claim 38 further comprising a fourth diode in series with the first coil, a fifth diode in series with the second coil, and a sixth diode in series with the third coil.

40. For a remote device having a removable power supply, an adapter comprising:
10 electrical connectors disposed in the same configuration as that of the removable power supply; and

a secondary winding for receiving power from a contactless power supply and supplying power to the electrical connectors.

41. The adapter of claim 40 further comprising a rechargeable power source
15 connected to the electrical connector.

42. The adapter of claim 41 further comprising a charging circuit coupled to the rechargeable power source and the secondary winding.

43. The adapter of claim 42 where the secondary winding is comprised of three orthogonal windings.

20 44. The adapter of claims 42 or 43, further comprising a transceiver for enabling communication between the remote device and the contactless power supply.

45. The adapter of claim 44 further comprising a dongle connected to the transceiver for connecting the transceiver to a communication port on the remote device.

46. The adapter of claim 45 further comprising a dongle connector connected to the dongle for insertion into the communication port.